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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/693,554

10/24/2003

Fumii Higuchi

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EXAMINER

DANIELS, MATTHEW J

ART UNIT

PAPER NUMBER

1732

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/07/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/693,554

Applicant(s)

HIGUCHI, FUMII

Examiner

Matthew J. Daniels

Art Unit

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 December 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 12/7/06.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. In the reply received 7 December 2006, Claims 1-24 are pending, and Claims 19-24 are new.

#### ***Drawings***

2. The drawings were received on 7 December 2006. These drawings are accepted. Figures 1-7 are admitted prior art.
3. The objection as failing to comply with 37 CFR 1.84(p)(5) is withdrawn.

#### ***Information Disclosure Statement***

4. A copy of the 7 December 2006 IDS is enclosed.

#### ***Claim Rejections - 35 USC § 112***

5. Rejections set forth previously under this section are withdrawn in view of the arguments on page 10 of the 7 December 2006 response.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1-4, 6-10, 12-16, and 18-24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Higuchi (USPN 5686219) in view of Meinander (WO 99/43886). **As to Claim 1**, Higuchi teaches a method for preparing a toner resin from a base resin, comprising:

conveying a base resin to an aperture in a housing of a toner extruder, the housing surrounding a conveyor (Figs. 1-5);  
inhibiting adhesion of melted resin to walls of the aperture (substantially the same as the disclosed mixer, and also includes water cooling, 306 in Fig. 1);  
adding chemical initiator to a toner extruder (3:57-4:5);  
mixing the base resin and the chemical initiator within the extruder to form the mixed resin (3:57-4:5); and  
conveying the mixed resin within the extruder to an extruding die (Fig. 3, 120).

Higuchi is silent to providing a lead-in gap at a feed port end of the conveyor. However, lead-in gaps at a feed port end would have been obvious over Meinander, who teaches a lead-in gap at a feed port end of a conveyor (Figs. 3-4B).

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Meinander into that of Higuchi because Higuchi suggests that a suitable shape and clearances should be selected or chosen (6:60-65, 8:50-67) and Meinander suggests that a wedge-like inlet is most desirable to provide a maximally efficient mass introduction (page 15, lines 5-14).

**As to Claims 2 and 3**, because the method disclosed by Higuchi is substantially the same as the claimed method, the repelling and inhibiting adhesion would be inherent or obvious in Higuchi's method alone or combined with Meinander. **As to Claim 4**, Higuchi teaches a spacing

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between the housing and the conveyor (8:50-67). **As to Claim 6**, Higuchi cools the base resin (4:27 and elsewhere).

**As to Claim 7**, Higuchi teaches a toner resin preparation method comprising:

providing a base resin (3:59-60);

providing a toner extruder comprising a housing and a conveyor in the housing (Figs. 1-5);

placing base resin in the toner extruder (Fig. 2, item 26);

conveying base resin to an aperture in the toner extruder housing (Fig. 1);

inhibiting adhesion of melted resin to walls of the aperture (substantially the same as the disclosed mixer, and also includes water cooling, 306 in Fig. 1);

adding chemical initiator to the base resin in the toner extruder (3:57-4:5);

mixing the base resin and the chemical initiator within the extruder to form a mixed resin (columns 3-7);

conveying the mixed resin within the extruder to an extruding die (Fig. 2, item 120); and

extruding the mixed resin through the extruding die to form toner resin (Fig. 2, item 120, 4:66-5:10).

Higuchi is silent to providing a lead-in gap at a feed port end of the conveyor. However, lead-in gaps at a feed port end would have been obvious over Meinander, who teaches a lead-in gap at a feed port end of a conveyor (Figs. 3-4B).

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Meinander into that of Higuchi because Higuchi suggests that a suitable shape and clearances should be selected or chosen (6:60-65, 8:50-67) and

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Meinander suggests that a wedge-like inlet is most desirable to provide a maximally efficient mass introduction (page 15, lines 5-14).

**As to Claims 8 and 9**, because the method disclosed by Higuchi is substantially the same as the claimed method, the repelling and inhibiting adhesion would be inherent or obvious in Higuchi's method alone or combined with Meinander. **As to Claim 10**, Higuchi teaches a spacing between the housing and the conveyor (8:50-67). **As to Claim 12**, Higuchi cools the base resin (4:27 and elsewhere).

**As to Claim 13**, Higuchi teaches a toner resin preparation method in an apparatus that has an aperture (Fig. 1, items 210 and 214) comprising:

- providing a base resin (3:59-60);
- placing base resin in the toner extruder (Fig. 2, item 26);
- conveying base resin to an aperture in the toner extruder housing (Fig. 1);
- inhibiting adhesion of melted resin to walls of the aperture (substantially the same as the disclosed mixer, and also includes water cooling, 306 in Fig. 1);
- adding chemical initiator to the base resin in the toner extruder (3:57-4:5);
- mixing the base resin and the chemical initiator within the extruder to form a mixed resin (columns 3-7);
- conveying the mixed resin within the extruder to an extruding die (Fig. 2, item 120); and
- extruding the mixed resin through the extruding die to form toner resin (Fig. 2, item 120, 4:66-5:10).

Higuchi is silent to providing a lead-in gap at the feed port. However, lead-in gaps at a feed port end would have been obvious over Meinander, who teaches a lead-in gap at a feed port end of a conveyor (Figs. 3-4B).

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Meinander into that of Higuchi because Higuchi suggests that a suitable shape and clearances should be selected or chosen (6:60-65, 8:50-67) and Meinander suggests that a wedge-like inlet is most desirable to provide a maximally efficient mass introduction (page 15, lines 5-14).

**As to Claims 14 and 15**, because the method disclosed by Higuchi is substantially the same as the claimed method, the repelling and inhibiting adhesion would be inherent or obvious in Higuchi's method alone or combined with Meinander. **As to Claim 16**, Higuchi teaches a spacing between the housing and the conveyor (8:50-67). **As to Claim 18**, Higuchi cools the base resin (4:27 and elsewhere).

**As to Claims 19, 21, and 23**, these claim limitations are interpreted to refer to instant Figs. 8 and 9 where the arrow on item 220 is directed to the side of the extruder to which resin flow is directed toward the lead-in gap. Meinander provides arrows items 20' and 22' in Figs. 3 and 4b, respectively, which show that the wedge that is interpreted to be the lead-in gap is on a side of the mixer to which the flow of material is directed.

**As to Claims 20, 22, and 24**, these claim limitations are drawn to a capability, namely that of having "movable aspects" (See Claims 20, 22, 24, "has movable aspects"), which is an apparatus limitation and not a process step. Because the capability is not utilized by the process (there is no claim or step to moving these movable aspects), these limitations are given little

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patentable weight as being drawn to apparatus limitations which do not materially affect the process. In a first alternative interpretation, Meinander teaches that the transition or wedge should be designed in one of several configurations (Figs. 3 and 4b), and it would have been obvious to provide separable and movable elements to provide the ability to adjust the design to determine the maximally efficient mass introduction design suggested on page 15 of the reference. In a second alternative interpretation, it would have been obvious to make the wedge portions of Meinander (item 14 in Figs. 3-4b) separable in order to clean the interior and the mixing elements.

7. **Claims 5, 11, and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Higuchi (USPN 5686219) in view of Meinander (WO 99/43886), and further in view of Bayley (USPN 5397671). Higuchi and Meinander teach the subject matter of Claims 1, 7, and 13 above under 35 USC 103(a). **As to Claim 5**, Higuchi appears to be silent to the premixing of the base resin with the initiator. However, Bayley teaches that when an initiator is solid, it is preferable if the base resin and initiator are preblended (8:40-60). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Bayley into that of Higuchi in order to avoid agglomeration of the initiator in the mixing apparatus. **As to Claim 11**, Higuchi appears to be silent to the premixing of the base resin with the initiator. However, Bayley teaches that when an initiator is solid, it is preferable if the base resin and initiator are preblended (8:40-60). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Bayley into that of Higuchi in order to avoid agglomeration of the initiator in the mixing apparatus. **As to Claim**



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17, Higuchi appears to be silent to the premixing of the base resin with the initiator. However, Bayley teaches that when an initiator is solid, it is preferable if the base resin and initiator are preblended (8:40-60). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Bayley into that of Higuchi in order to avoid agglomeration of the initiator in the mixing apparatus.

### *Response to Arguments*

8. Applicant's arguments filed 7 December 2006 have been fully considered but they are not persuasive. The arguments appear to be on the following grounds:

- a) The lead-in gap is not taught by the combination because the inlet is not a feed port end of a conveyor.
- b) Meinander describes a design for use in catching and treating waste paper and does not teach or suggest any utility for preventing lumping of toner. The references are from independent and distinct fields of art.
- c) There is no motivation to combine the references.

9. These arguments are not persuasive for the following reasons:

- a) Note that the instant extruder is exactly or substantially the same as the extruder of Higuchi. Compare instant Figs. 1-7 with figures from the Higuchi reference. The difference between the instant application and the Higuchi reference appears to be the lead-in gap. Thus, if the inlet is a feed port end of a conveyor in the instant invention, the same element and configuration is

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asserted to be present in the prior art device. Additionally, Meinander's "wedge-like inlet" is interpreted to be a feed port end of a conveyor – see, for example, Fig. 1.

b) To the extent that Applicant's remarks assert that the references are non-analogous, the Examiner respectfully disagrees. Both references applied against the independent claims are at least within the same field of endeavor of mixing processes. A difference in the material mixed is not interpreted as separating these references into different fields of endeavor.

c) Motivation has been provided and Applicant's remarks do not appear to address the stated motivation.

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Daniels whose telephone number is (571) 272-2450. The examiner can normally be reached on Monday - Friday, 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MJD 3/1/07

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3/2/07